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NOTES AND NEWS.

Professor Charles A. Young writes from Princeton, N.J., June 13, "I have received from Professor Holden the following telegram, announcing the success of the eclipse expedition:" —

SAN FRANCISCO, Cal., June 11.

American eclipse expedition arrived at San Francisco, June 11. Holden reports no Vulcan as bright as $5\frac{1}{2}$ magnitude. Hastings's observations prove the corona to be largely a phenomenon of diffraction by the great change in length of 1474 line on east and west sides of sun. No black lines in corona spectrum but D. Full observations with grating spectroscope, prismatic telescope, and integrating spectroscope, by Rockwell, Upton, and Brown. Contacts by Preston. English and French parties successful. (Signed)

E. S. HOLDEN.

From a fuller telegraphic report in the *New-York tribune*, it appears that our party reached Caroline Island on April 20, and the French party two days later. The weather was favorable on the day of the eclipse, and all the observations that had been planned were fully carried out. The English observers who accompanied the American party, and to whom all photographic observations were made over, obtained negatives both of the corona and of its spectrum, the latter containing a number of bright lines. They also got a photograph of the reversal of the lines at the beginning and end of totality, and presumably a number of other plates at intermediate stages.

The French observers obtained photographs of the corona and of the whole region of sky near the sun (showing the stars — or at least taken for that purpose, in hopes of thus photographically catching Vulcan). They report dark lines in corona spectrum.

Professor Hastings's observations of the change of length in the 1474 line on the east and west sides of the sun relate to a theory recently proposed by him, that the 'apparent corona,' as it may be called, is mainly a *diffraction* phenomenon, the *real* corona itself being only a very narrow ring around the sun, optically widened out by diffraction (not refraction) at the edge of the moon into the extensive halo actually observed. Professor Hastings arranged an apparatus by which the coronal spectrum on both sides of the sun could be simultaneously observed, and found that at the beginning of the totality the 1474 line was 12' long on the east side, while it was short and faint on the west. As the eclipse advanced, this inequality disappeared, and at its close was reversed, the change being much greater than could be ascribed simply to the moon's motion. While the observation accords satisfactorily with the new theory, it is, however, doubtful whether it will be regarded as *proving* it, since the effect can also be explained simply as a phenomenon of aerial illumination.

The corona is reported as having been bright, with

five well-defined streamers, of length not stated. The chromosphere was unusually quiescent.

Messrs. Brown and Preston were left at Honolulu to make pendulum observations. All the members of the party are reported as in good health. The French party are also expected at San Francisco in a day or two.

— The instructions of the Greely-relief party have been published. They are to endeavor to reach Greely by ship if possible. The *Proteus* has been chartered for the occasion. If unsuccessful, they are to winter at Lifeboat Cove, Littleton Island; though why they should get on the side farthest from the party to be rescued is not clear. Sledge-journeys will be made, if practicable, after winter sets in; though the time when Smith's Sound may be crossed by sledges to Cape Isabella cannot be early in the season, and may not present itself at all. 'Three hard-ice men' are to be taken from St. Johns, and apparently will be the only members of the party having any knowledge or experience of the arctic regions, the rest being officers and enlisted men of the U.S. army. As the expedition has been contemplated for a year at least, it seems unfortunate that the experience of Lieut. Schwatka could not have been brought to bear on the outfit and plans. The instructions state that Greely's supplies will be exhausted in the coming autumn, which is a surprise to those who were informed by the public prints, at the time his expedition set out, that he was provisioned for three years. It is evident that the question of rescue is even more grave than has been generally understood, especially when the usual impracticability of crossing Lady Franklin Sound on the ice (as established by the Nares expedition) is taken into account. Mr. Beebe will not accompany the relief party. The U. S. S. *Yantic* will accompany the *Proteus* as tender.

Messrs. H. G. Dresel and A. A. Ackerman, ensigns, U.S. navy, accompany the Greely relief party to Greenland as naturalists attached to the U. S. S. *Yantic*. Both of these gentlemen have, during the past eight months, been acting as assistants in the U. S. national museum at Washington, the former in the department of fish, the latter in the department of mineralogy. They are mainly equipped for collecting marine objects, and interesting results in the line of fish and marine invertebrates are expected from them.

— *Nature* states, that at a meeting of the subscribers to the Balfour memorial fund, held at Cambridge on the 26th inst., it was stated that £8,309 had been promised, all except £100 of which had been paid. Of this, £8,078 had been invested, yielding an annual income of £284 10 s., which it was hoped further subscriptions would raise to £300. Among the regulations agreed to were the following: the income of the fund shall be applied, (1) to endow a studentship, the holder of which shall devote himself

to original research in biology, especially animal morphology; (2) to further, by occasional grants of money, original research in the same subject. The student shall not necessarily be a member of the university, and, during his tenure of the studentship, shall devote himself to original biological inquiry, and shall not systematically follow any business or profession, or engage in any educational or other work, which, in the opinion of those charged with the administration of the fund, would interfere with his original inquiries. The place and nature of the studies of the student shall be subject to the approval of the managers, provided that the student shall be bound to pursue his studies within the university during at least three terms during his tenure of the studentship, unless the managers shall, with the approval of the board, dispense with this requirement for special reasons. The managers shall take such steps as they may think necessary to satisfy themselves as to the diligence and progress of the student, and may require from him any reports or other information on the subject of his studies which they may think desirable. The studentship shall be tenable for three years; but it may be continued over a second term of three years (but no longer) to the same person, if the managers and board decide that it would be clearly in the interests of biological research. The balance of the income of the fund, after providing for the studentship and for any necessary expenses connected with the election, shall be devoted to the furtherance of original research in biology, especially animal morphology. Grants may be made for this purpose either to the holder of the Balfour studentship or to any other person engaged in research.

--From a circular issued to the members of the American committee of the Balfour memorial fund, we learn that the subscriptions received by the treasurer up to June 11 amounted to \$634.95. The expenses incurred were \$31.05, leaving a balance of \$603.90, which has been forwarded to the general treasurer of the fund in England.

—During the winter of 1883-84, series of lessons will be delivered before the Teachers' school of science in the Lowell free courses. Teachers will please note the fact, that these lessons are chiefly upon one subject, chemistry, and that the first course of five, by Mr. Norton, is preparatory for the other two courses. First course: Elements of chemistry, by Lewis M. Norton of the Massachusetts institute of technology; First principles of chemistry; The chemistry of the air; The chemistry of the water; The chemistry of combustion; The chemistry of the metallic elements. This course will be illustrated by the simplest apparatus which can be used for such purposes. Second course: Practical examination, with simple apparatus, of the physics and chemistry of vegetable physiology, by Professor George L. Goodale of Harvard university; Vegetable assimila-

tion; The mode in which plants prepare food for themselves and for animals; The kinds of food stored in vegetable organs; Illustrations of the starches, sugars, oils, and albuminoidal matters; How food is used by plants and animals in the formation of new parts; Mechanics of growth; How food is used in work of all kinds by different organisms; Adaptation of organisms to extremes of heat and light, chiefly with respect to geographical distribution. The teachers in the audience will be supplied with simple apparatus; and this course and Mr. Crosby's will be made experimental and thoroughly practical so far as this is possible. The series will be concluded by five lessons on chemical principles illustrated by common minerals, by W. O. Crosby of the Massachusetts institute of technology, which cannot at present be more fully described.

—The new Fish-commission steamer *Albatross* has recently arrived at the Brooklyn (N.Y.) navy-yard from her first extended cruise, which covered the region from Cape Hatteras to Newport (R.I.). The main object of this cruise was to thoroughly test the various appliances of research before starting upon the regular campaign, which will begin about July 1. A considerable amount of stormy weather was encountered; but in the worst of it the new ship behaved splendidly, the greatest roll recorded having been only about 29 degrees. Numerous dredgings and soundings were made down to a depth of 1,168 fathoms, and a large amount of valuable zoological material was obtained. Experiments were also made with the powerful electric lamps for lighting up the sea. Considering the inexperienced crew, and the newness of all the appliances, this first trip has been entirely satisfactory. At Brooklyn the *Albatross* will receive a new coat of paint, after which she will repair to Washington to fit up for the summer work.

—The summer investigating party of the U. S. fish-commission, with the commissioner, Professor Baird, will leave for the Wood's Holl (Mass.) station about July 1, for a stay of three months or longer. The party will consist of the same members as during the past two years, Professor Verrill, of Yale college, being in immediate charge of the zoological work. The new steamer *Albatross* will make her trips from the same place, and the *Fish Hawk* will engage in dredging and trawling in the neighboring regions. Arrangements are now nearly completed for starting work upon the new wharf in the big harbor, and upon the laboratory and dormitory buildings, which are to occupy sites at the inner end of the wharf. These structures will all be in readiness for the season of 1884.

—The new Parkes museum of hygiene was opened in London, May 26. The Duke of Albany delivered the opening address. Among the speakers were Sir Charles Dilke, Professor Tyndall, and the Archbishop of York.